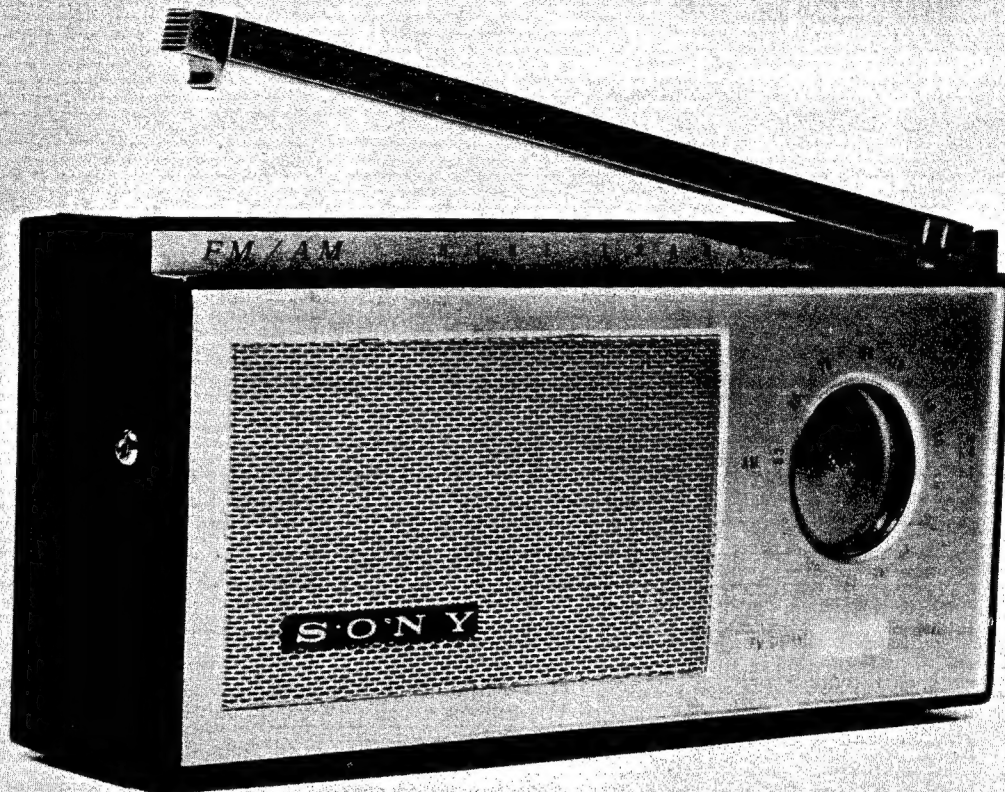


TFM-96



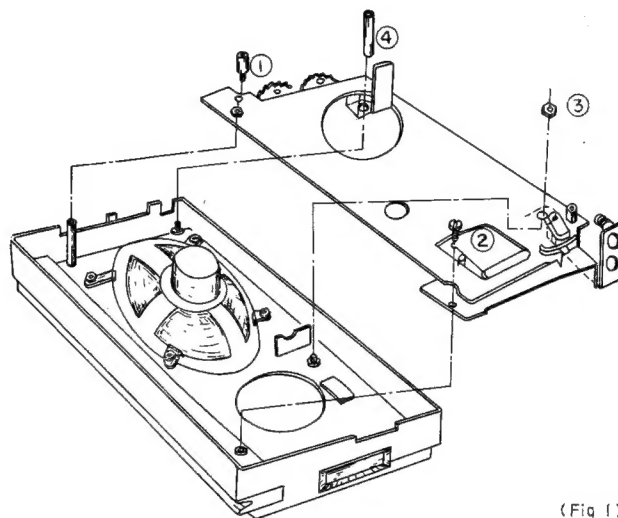
Specifications

Circuit: 9 Transistor Superheterodyne
Frequency Coverage: FM 86.5 ~ 108 Mc (3.53 ~ 2.78 m)
MW 530 ~ 1,605 Kc (566 ~ 187 m)
Intermediate Frequency: FM 10.7 Mc
MW 455 Kc
Antenna System: Built-in Ferrite Bar Antenna (MW)
Built-in Telescopic Antenna (FM)
Terminal for External Antenna (MW)
Maximum Sensitivity: FM 4 μ V/m
(at 10mW Output) MW 45 μ V/m
Selectivity: MW, 30 dB at 10 Kc off resonance, at 1,400 Kc
Output Power: 260 mW (undistorted)
Speaker: 4" \times 2-1/2" PM dynamic, 35 Ω
Battery: Six size AA Penlight Batteries (9 Volts)
Current Drain: 10mA (AM), 12mA (FM) at zero signal,
47mA at 260mW output
Dimensions: 7-7/16" \times 3-5/8" \times 1-13/16"
(190 \times 92.5 \times 46 mm)
Weight: 1-7/16 pounds (660 gr.)
Colours: Black, Brown

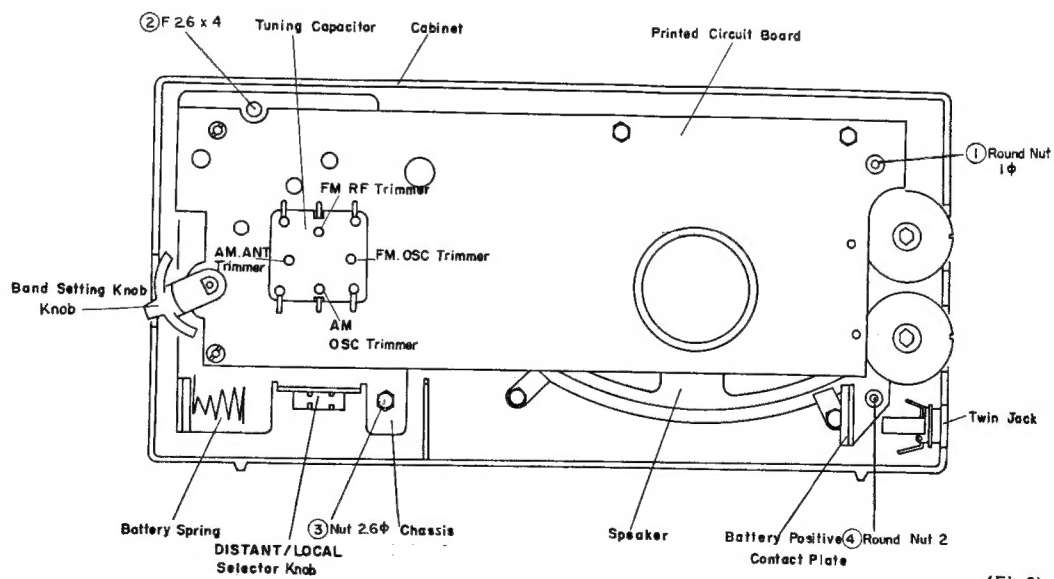
SONY®
SERVICING GUIDE

To Remove the Circuit Board from the Cabinet

1. Remove four Back Cover Holding Screws (RK 2.6×6).
2. Open the Back Cover.
3. Take out the Batteries.
4. Remove Screws and Nuts (①, ②, ③ and ④ in Fig. 1. and 2.)
5. Remove Twin Jack by pulling straight up.
6. Lift up the Circuit Board carefully paying attention to the lead wires.
7. Unsolder lead wires for Telescopic Antenna, External Antenna and for Speaker at the respective terminals.



(Fig 1)



(Fig 2)

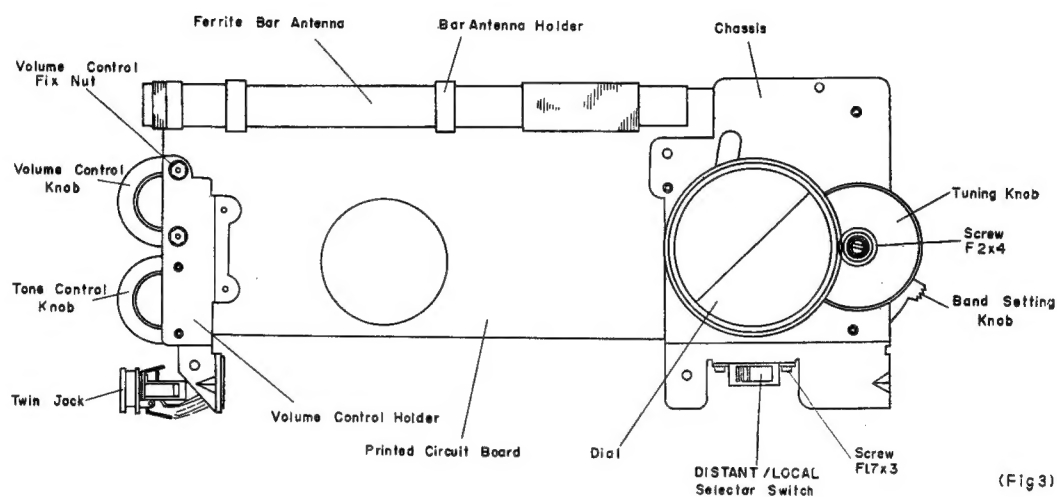
Adjustment and Alignment

a) Frequency Coverage

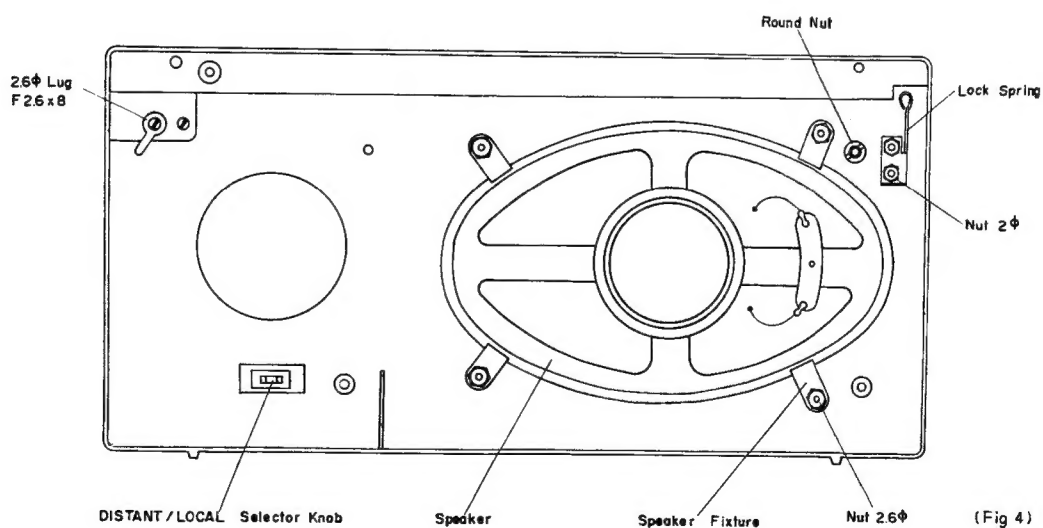
	Lower Limit	Adjust	Upper Limit	Adjust
FM	85.5 Mc	Core and gap of L_4	109.5 Mc	C_3
MW	520 Kc	Core of L_6	1,680 Kc	C_5

b) Tracking Alignment

	Checking Point	Adjust
FM	86.5 Mc	Core and gap of L_2
	108 Mc	C_2
MW	620 Kc	Position of L_5
	1,400 Kc	C_4

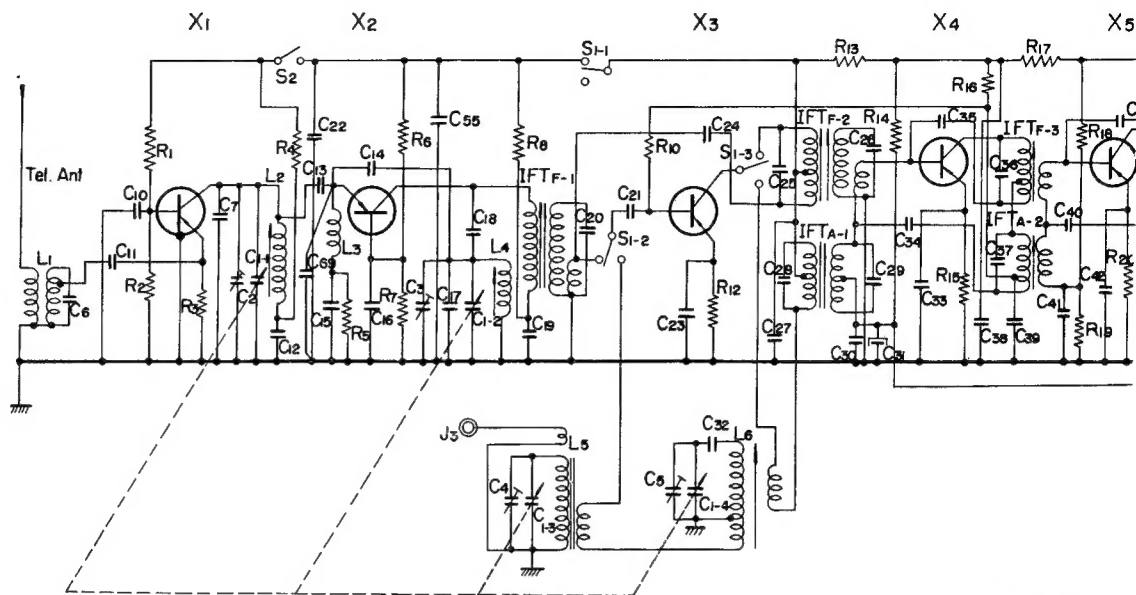


(Fig 3)



(Fig 4)

Schematic

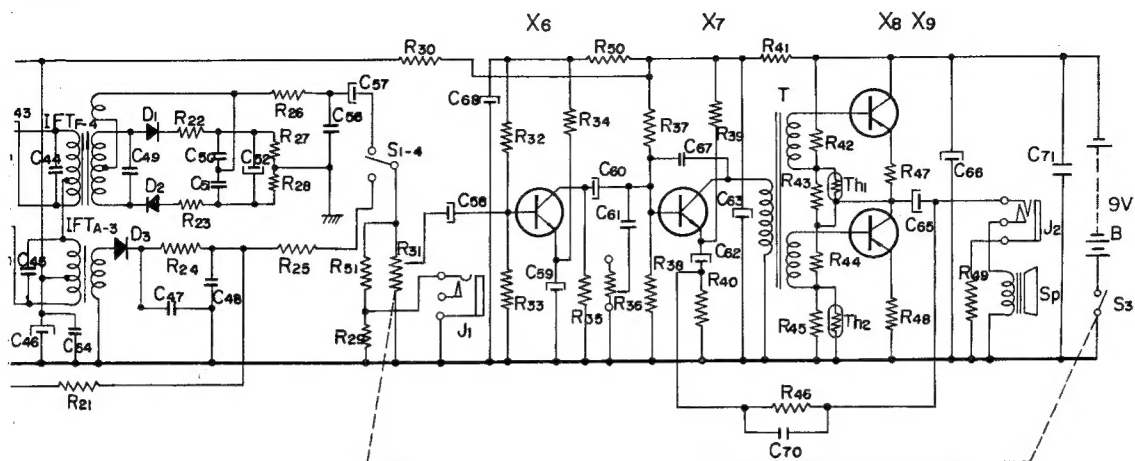


Electronic

Part No.	Symbol	Description	Part No.	Symbol	Description
1-501-028-11	Tel. ANT	Telescopic Antenna		D ₃	Diode 1T23
1-401-143-11	L ₁	FM, Antenna Coil		Th ₁	Thermistor CS-120
1-405-225-11	L ₂	FM, RF Coil		Th ₂	" CS-120
1-409-017-11	L ₃	FM, IF Trap Coil			Resistor
1-405-225-11	L ₄	FM, Oscillator Coil	1-203-427-00	R ₁	Carbon 10K Ω $\pm 5\%$ $\frac{1}{16}$ W
1-401-142-13	L ₅	MW, Ferrite Bar Antenna	-434-00	R ₂	" 3.3K Ω " "
1-405-235-11	L ₆	MW, Oscillator Coil	-421-00	R ₃	" 1K Ω " "
1-403-226-11	IFTF ₋₁₋₁	FM, Double Tuned IFT	-445-00	R ₄	" 560 Ω " "
-226-12	IFTF ₋₁₋₂	FM, " "	-421-00	R ₅	" 1K Ω " "
-225-11	IFTF ₋₂₋₁	FM, " "	-439-00	R ₆	" 12K Ω " "
-225-12	IFTF ₋₂₋₂	FM, " "	-460-00	R ₇	" 2.7K Ω " "
-224-11	IFTF ₋₃	FM, IF Transformer	-446-00	R ₈	" 2K Ω " "
-227-11	IFTF ₋₄₋₁	FM, Double Tuned IFT for Discriminator		R ₉	—deleted—
-227-12	IFTF ₋₄₋₂	FM, " "	1-203-425-00	R ₁₀	Carbon 5.6K Ω $\pm 5\%$ $\frac{1}{16}$ W
-080-11	IFTA ₋₁₋₁	MW, Double Tuned IFT		R ₁₁	—deleted—
-080-12	IFTA ₋₁₋₂	MW, " "	1-203-427-00	R ₁₂	Carbon 10K Ω $\pm 5\%$ $\frac{1}{16}$ W
-082-11	IFTA ₋₂	MW, IF Transformer	-859-00	R ₁₃	" 22 Ω " "
-081-11	IFTA ₋₃	MW, " "	-618-00	*R ₁₄	" 91K Ω " "
1-423-054-11	T	Driver Transformer	-445-00	R ₁₅	" 560 Ω " "
1-513-172-11	S ₁₋₁₋₄	Band Setting Switch	-626-00	R ₁₆	" 9.1K Ω " "
-122-00	S ₂	FM, Distant/Local Selector Switch	-859-00	R ₁₇	" 22 Ω " "
	S ₃	Power Switch (built in Volume Control)	-634-00	R ₁₈	" 36K Ω " "
1-507-075-11	J ₁	DET Out Jack	-424-00	R ₁₉	" 4.7K Ω " "
-036-02	J ₂	Earphone Jack	-445-00	R ₂₀	" 560 Ω " "
1-502-075-12	J ₃	External Antenna Jack	-438-00	*R ₂₁	" 6.8K Ω " "
1-528-003-00	SP	Speaker, 35 Ω	-604-00	R ₂₂	" 330 Ω " "
	B	Battery (9V)	-604-00	R ₂₃	" 330 Ω " "
			-423-00	R ₂₄	" 2.2K Ω " "
			-448-00	*R ₂₅	" 5.1K Ω " "
			-421-00	R ₂₆	" 1K Ω " "
			-425-00	R ₂₇	" 5.6K Ω " "
			-425-00	R ₂₈	" 5.6K Ω " "
			-446-00	R ₂₉	" 2K Ω " "
			-859-00	R ₃₀	" 22 Ω " "
			1-221-374-11	R ₃₁	Volume Control, 5K Ω
			1-203-718-00	R ₃₂	Carbon 4.2K Ω $\pm 5\%$ $\frac{1}{16}$ W
			-429-00	R ₃₃	" 22K Ω " "
			-421-00	R ₃₄	" 1K Ω " "
			-446-00	R ₃₅	" 2K Ω " "
			1-221-375-11	R ₃₆	Tone Control, 5K Ω
			1-203-718-00	R ₃₇	Carbon 4.2K Ω $\pm 5\%$ $\frac{1}{16}$ W

* To be adjusted

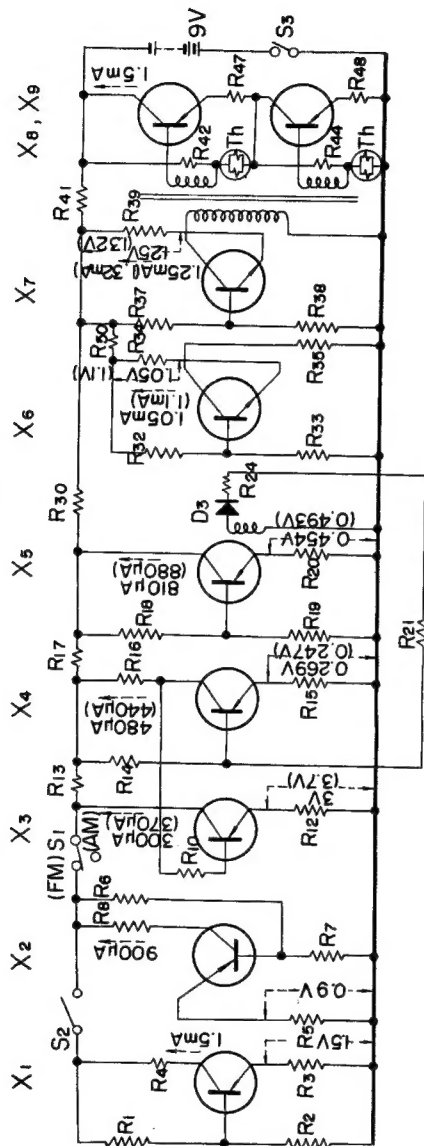
Diagram



Parts List

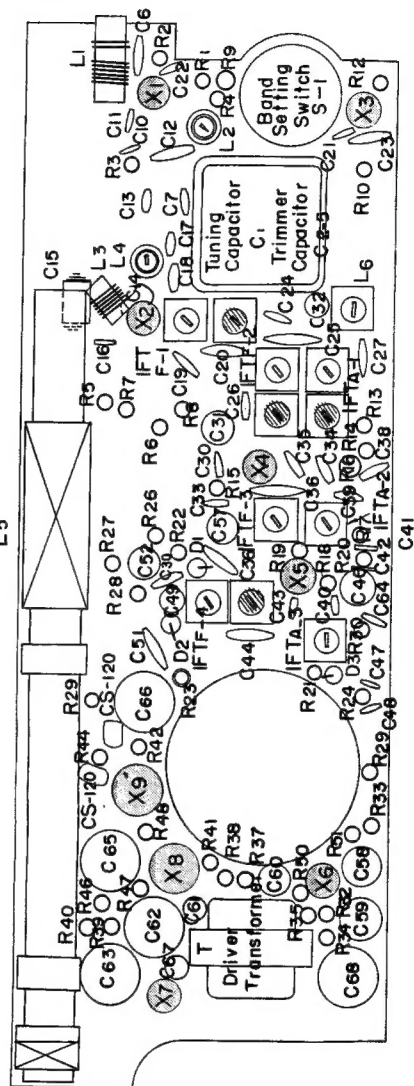
Part No.	Symbol	Description	Part No.	Symbol	Description
1-203-439-00	R ₃₈	Carbon 12K Ω $\pm 5\%$ $\frac{1}{16}$ W	1-121-104-00	C ₃₁	10 μ F 6V Electrolytic
-421-00	R ₃₉	" 1K Ω " "	1-103-024-11	C ₃₂	130pF $\pm 5\%$ Styrol
-418-00	R ₄₀	" 10 Ω " "	1-101-072-14	C ₃₃	0.01 μ F $\pm 20\%$ Ceramic
-594-00	R ₄₁	" 100 Ω " "	-009-11	C ₃₄	1pF ± 0.5 pF "
-434-00	R ₄₂	" 3.3K Ω " "	-010-11	C ₃₅	2pF " "
	R ₄₃	220 Ω , Built in Th ₁	-112-12	C ₃₆	50pF $\pm 5\%$ "
-434-00	R ₄₄	Carbon 3.3K Ω $\pm 5\%$ $\frac{1}{16}$ W		C ₃₇	150pF, Built in IFTA-4-1
	R ₄₅	220 Ω , Built in Th ₂	-141-11	C ₃₈	0.01 μ F $\pm 20\%$ Ceramic
-421-00	R ₄₆	Carbon 1K Ω $\pm 5\%$ $\frac{1}{16}$ W	-141-11	C ₃₉	0.01 μ F " "
-441-00	R ₄₇	" 3 Ω " "	-009-11	C ₄₀	1pF ± 0.5 pF "
-441-00	R ₄₈	" 3 Ω " "	-141-11	C ₄₁	0.01 μ F $\pm 20\%$ "
-895-00	R ₄₉	" 27 Ω " "	-072-14	C ₄₂	0.01 μ F " "
-594-00	R ₅₀	" 100 Ω " "	-010-11	C ₄₃	2pF ± 0.5 pF "
-429-00	R ₅₁	" 22K Ω " "	-115-12	C ₄₄	30pF " "
		Capacitor		C ₄₅	150pF, Built in IFTA-3
1-151-066-11	C ₁₋₁₋₄	PVC Tuning Capacitor, 4 gang	1-121-108-00	C ₄₆	10 μ F 10V Electrolytic
	C ₂₋₅	Trimmer Capacitor, 4 unit	1-101-073-14	C ₄₇	0.02 μ F $\pm 20\%$ Ceramic
1-101-056-11	C ₆	40pF $\pm 5\%$ Ceramic	-073-14	C ₄₈	0.02 μ F " "
-114-11	C ₇	15pF " "	1-103-024-11	C ₄₉	130pF $\pm 5\%$ Styrol
	C ₈	—deleted—	1-101-117-11	C ₅₀	200pF $\pm 5\%$ Ceramic
	C ₉	—deleted—	-117-11	C ₅₁	200pF " "
-141-11	C ₁₀	0.01 μ F $\pm 20\%$ Ceramic	1-121-112-00	C ₅₂	10 μ F 3V Electrolytic
-141-11	C ₁₁	0.01 μ F " "		C ₅₃	—deleted—
-073-11	C ₁₂	0.02 μ F " "		C ₅₄	—deleted—
-011-11	C ₁₃	3pF ± 0.5 pF "	1-101-072-14	C ₅₅	0.01 μ F $\pm 20\%$ Ceramic
-012-11	C ₁₄	5pF " "	-073-11	C ₅₆	0.02 μ F " "
1-103-058-12	C ₁₅	500pF $\pm 5\%$ Styrol	1-121-112-00	C ₅₇	10 μ F 3V Electrolytic
1-101-141-11	C ₁₆	0.01 μ F $\pm 20\%$ Ceramic	-108-00	C ₅₈	10 μ F 10V "
-538-11	C ₁₇	18pF $\pm 5\%$ "	-110-00	C ₅₉	30 μ F 10V "
-112-12	C ₁₈	50pF " "	-117-00	C ₆₀	5 μ F 12V "
-141-11	C ₁₉	0.01 μ F $\pm 20\%$ "	1-127-901-00	C ₆₁	0.3 μ F $\pm 100\%$ " (Alox)
-722-11	C ₂₀	25pF $\pm 5\%$ "	1-121-159-00	C ₆₂	100 μ F 10V "
-141-11	C ₂₁	0.01 μ F $\pm 20\%$ "	-159-00	C ₆₃	100 μ F 10V "
-141-11	C ₂₂	0.01 μ F " "	1-101-141-11	C ₆₄	0.01 μ F $\pm 20\%$ Ceramic
-073-11	C ₂₃	0.02 μ F " "	-159-00	C ₆₅	100 μ F 10V Electrolytic
-093-11	C ₂₄	6pF ± 0.5 pF "	-159-00	C ₆₆	100 μ F 10V "
-112-12	C ₂₅	50pF $\pm 5\%$ "	1-103-058-12	C ₆₇	500pF $\pm 5\%$ Styrol
-722-11	C ₂₆	25pF $\pm 5\%$ "	1-121-159-00	C ₆₈	100 μ F 10V Electrolytic
-141-11	C ₂₇	0.01 μ F $\pm 20\%$ "	1-101-010-11	C ₆₉	2pF ± 0.5 pF Ceramic
	C ₂₈	150pF, Built in IFTA-1-1	-075-11	C ₇₀	0.002 μ F $\pm 20\%$ "
	C ₂₉	150pF, Built in IFTA-1-2	-072-14	C ₇₁	0.01 μ F " "
-141-11	C ₃₀	0.01 μ F $\pm 20\%$ Ceramic			

Voltage and Current Distribution Chart at Zero Signal





Mounting Diagram

— Parts Side —
L5

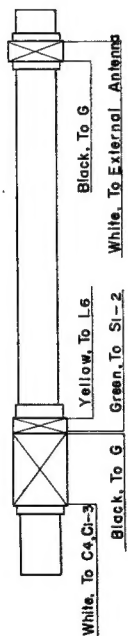


IFTF-1, IFTF-2, IFTF-4 & IFTA-1

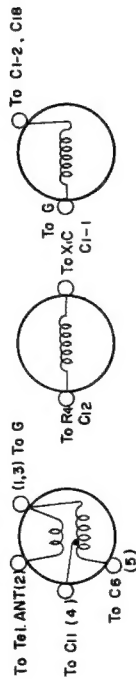
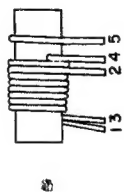
 Pink Core : Primary Winding
  Blue Core : Secondary Winding

Printed Side —

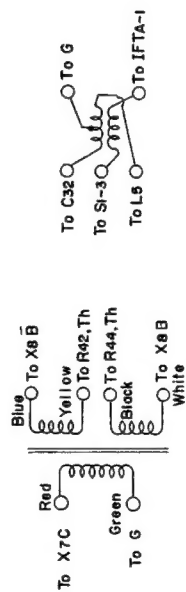




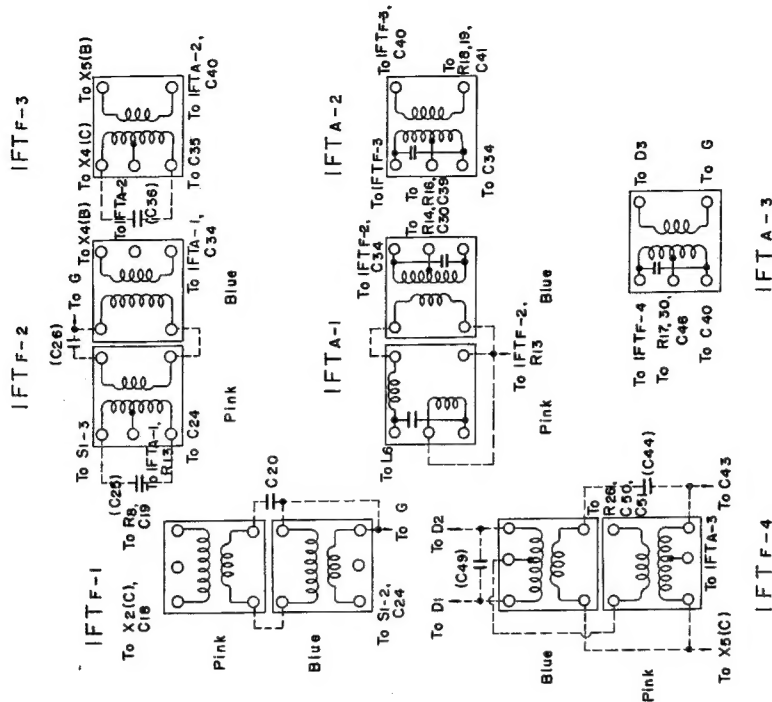
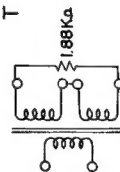
L5, MW, Ferrite Bar Antenna Coil



L1, FM ANT Coil L2, FM Rf Coil L4, FM OSC Coil



T Driver Transformer



Driver Transformer		DC Resistance
Primary	Impedance	375Ω
Secondary	470Ω X 2	48Ω

SONY CORPORATION